Claims

1. An aqueous pickling agent on the basis of sulfuric acid or phosphoric acid and hydrogen fluoride for stainless steels, which pickling agent is free of wetting and emulsifying agents, characterized in that it contains (each as 100 wt-% substance)

1.5 to 16 wt-% sulfuric acid or
2.0 to 30 wt-% phosphoric acid

as well as

0.5 to 14 wt-% hydrogen fluoride and
0.5 to 15.5 wt-% acid-soluble aromatic nitro compound,

to which no iron(III) compound is supplied, and to which merely in the starting phase an oxiding agent can be supplied, which oxidizes iron(II) to form iron(III).

2. The pickling agent as claimed in claim 1, characterized in that in its application as bath pickle it contains

5.0 to 11 wt-% sulfuric acid or
8.0 to 20 wt-% phosphoric acid

as well as

4.0 to 10 wt-% hydrogen fluoride and
4.5 to 11 wt-% acid-soluble aromatic nitro compound.

3. The pickling agent as claimed in claim 1, characterized in that in its application as spraying or brush pickle it additionally contains

2.5 to 5.5 wt-% magnesium compound (calculated as Mg).

4. The pickling agent as claimed in claims 1 and 3, characterized in that in its application as spraying pickle it contains

9.5 to 15.5 wt-% sulfuric acid or
15.0 to 30.0 wt-% phosphoric acid

as well as

4.0 to 11.0 wt-% hydrogen fluoride,
4.5 to 11.5 wt-% acid-soluble aromatic nitro compound, and
2.5 to 4.5 wt-% magnesium compound (calculated as Mg).

5. The pickling agent as claimed in claims 1 and 3, characterized in that in its application as brush pickle it contains

12.0 to 16.0 wt-% sulfuric acid or
18.0 to 30.0 wt-% phosphoric acid

as well as

4.5 to 12.0 wt-% hydrogen fluoride,
2.5 to 9.5 wt-% acid-soluble aromatic nitro compound, and
3.0 to 5.5 wt-% magnesium compound (calculated as Mg).

6. The pickling agent as claimed in one or more of claims 1 to 5, characterized in that as acid-soluble aromatic nitro compound it contains m-nitrobenzene sulfonate and/or 3-nitrophthalate.